CLAIMS

What is claimed is:

1. An isolated nucleic acid encoding a mammalian *REMODEL*, or a fragment thereof.

2. The isolated nucleic acid of claim 1, wherein said nucleic acid shares at least about 33% sequence identity with a nucleic acid encoding at least one of rat *REMODEL* (SEQ ID NO:1), and a human *REMODEL* (SEQ ID NO:3).

3. An isolated nucleic acid encoding a mammalian *REMODEL*, wherein the amino acid sequence of said *REMODEL* shares at least about 6% sequence identity with an amino acid sequence of at least one of SEQ ID NO:2, SEQ ID NO:4, and SEQ ID NO:5.

4. An isolated polypeptide comprising a mammalian REMODEL.

5. The isolated polypeptide of claim 4, wherein said mammalian REMODEL molecule shares at least about 6% sequence identity with an amino acid sequence of at least one of SEQ ID NO:2, SEQ ID NO:4, and SEQ ID NO:5.

6. The nucleic acid of claim 1, said nucleic acid further comprising a nucleic acid encoding a tag polypeptide covalently linked thereto.

7. The nucleic acid of claim 6, wherein said tag polypeptide is selected from the group consisting of a green fluorescent protein tag polypeptide, an influenza virus hemagglutinin tag polypeptide, a myc tag polypeptide, a glutathione-S-transferase tag polypeptide, a myc-pyruvate kinase tag polypeptide, a His6 tag polypeptide, a FLAG tag polypeptide, and a maltose binding protein tag polypeptide.

8. The nucleic acid of claim 1, said nucleic acid further comprising a nucleic acid encoding a promoter/regulatory sequence operably linked thereto.

9. A vector comprising the nucleic acid of claim 1.

10. The vector of claim 9, said vector further comprising a nucleic acid encoding a promoter/regulatory sequence operably linked thereto.

11. A recombinant cell comprising the isolated nucleic acid of claim 1.

12. A recombinant cell comprising the vector of claim 9.

13. An isolated nucleic acid complementary to the nucleic acid of claim 1, said complementary nucleic acid being in an antisense orientation.

14. The isolated nucleic acid of claim 13, wherein said nucleic acid shares at least about 33% identity with a nucleic acid complementary with a nucleic acid having the sequence of at least one of a rat *REMODEL* molecule (SEQ ID NO:1), and a human *REMODEL* molecule (SEQ ID NO:3).

15. A recombinant cell comprising the isolated nucleic acid of claim 13.

16. An antibody that specifically binds with a mammalian REMODEL molecule polypeptide, or a fragment thereof.

17. The antibody of claim 16, wherein said antibody is selected from the group consisting of a polyclonal antibody, a monoclonal antibody, a humanized antibody, a chimeric antibody, and a synthetic antibody.

18. A composition comprising the antibody of claim 16 and a pharmaceutically-acceptable carrier.

19. A composition comprising the isolated nucleic acid of claim 13 and a pharmaceutically-acceptable carrier.

20. A composition comprising the isolated nucleic acid of claim 1 and a pharmaceutically-acceptable carrier.

21. A composition comprising the isolated polypeptide of claim 4 and a pharmaceutically-acceptable carrier.

22. A transgenic non-human mammal comprising the isolated nucleic acid of claim 1.

23. A method of treating a disease mediated by malexpression of a REMODEL molecule in a human, said method comprising administering to a human patient afflicted with a disease mediated by malexpression of a REMODEL molecule a REMODEL molecule expression-inhibiting amount of the composition of claim 19.

24. The method of claim 23, wherein said disease is selected from the group consisting of impaired wound healing, fibrosis of an organ, ectopic ossification, and hypertrophic scar formation.

25. A method of diagnosing arterial restenosis in a previously undiagnosed mammal, said method comprising obtaining a biological sample from said mammal, assessing the level of REMODEL in said biological sample, and comparing the level of REMODEL in said biological sample with the level of REMODEL in a biological sample obtained from a like mammal not afflicted with arterial restenosis, wherein a higher level of REMODEL in said biological sample from said mammal compared with the level of REMODEL in said biological sample from said like mammal is an indication that said mammal is afflicted with arterial restenosis, thereby diagnosing arterial restenosis in said previously undiagnosed mammal.

26. The method of claim 25, wherein said biological sample is selected from the group consisting of a blood vessel sample, and a damaged tissue sample.

27. A method of diagnosing negative remodeling in a previously undiagnosed mammal, said method comprising obtaining a biological sample from said mammal, assessing the level of REMODEL in said biological sample, and comparing the level of REMODEL in said biological sample with the level of REMODEL in a biological sample obtained from a like mammal not afflicted with negative remodeling, wherein a higher level of REMODEL in said biological sample from said mammal compared with the level of REMODEL in said biological sample from said like mammal is an indication that said mammal is afflicted with negative remodeling, thereby diagnosing negative remodeling in said previously undiagnosed mammal.

28. A method of diagnosing fibrosis in a previously undiagnosed mammal, said method comprising obtaining a biological sample from said mammal, assessing the level of REMODEL in said biological sample, and comparing the level of REMODEL in said biological sample with the level of REMODEL in a biological sample obtained from a like mammal not afflicted with fibrosis, wherein a higher level of REMODEL in said biological sample from said mammal compared with the level of REMODEL in said biological sample from said like mammal is an indication that said mammal is afflicted with fibrosis, thereby diagnosing fibrosis in said previously undiagnosed mammal.

29. A method of identifying a compound that affects expression of REMODEL in a cell, said method comprising contacting a cell with a test compound and comparing the level of REMODEL expression in said cell with the level of REMODEL expression in an otherwise identical cell not contacted with said test compound, wherein a higher or lower level of REMODEL expression in said cell contacted with said test compound compared with the level of REMODEL expression

in said otherwise identical cell not contacted with said test compound is an indication that said test compound affects expression of REMODEL in a cell.

30. A compound identified by the method of claim 29.

31. A method of identifying a compound that reduces expression of REMODEL in a cell, said method comprising contacting a cell with a test compound and comparing the level of REMODEL expression in said cell with the level of REMODEL expression in an otherwise identical cell not contacted with said test compound, wherein a lower level of REMODEL expression in said cell contacted with said test compound compared with the level of REMODEL expression in said otherwise identical cell not contacted with said test compound is an indication that said test compound reduces expression of REMODEL in a cell.

32. A compound identified by the method of claim 31.

33. A method of identifying a compound that affects TGF-β signaling, said method comprising contacting a cell with a test compound and comparing the level of REMODEL expression in said cell with the level of REMODEL expression in an otherwise identical cell not contacted with said test compound, wherein a higher or lower level of REMODEL expression in said cell contacted with said test compound compared with the level of REMODEL expression in said otherwise identical cell not contacted with said test compound is an indication that said test compound affects TGF-β signaling in a cell.

34. A kit for alleviating a disease mediated by malexpression of a REMODEL in a human, said kit comprising a REMODEL expression-inhibiting amount of the composition of claim 19, said kit further comprising an applicator, and an instructional material for the use thereof.

35. The kit of claim 34, wherein said disease is selected from the group consisting of negative remodeling, arterial restenosis, vessel injury, fibrosis.

36. A kit for alleviating a disease mediated by malexpression of a REMODEL in a human, said kit comprising a REMODEL expression-inhibiting amount of the composition of claim 20, said kit further comprising an applicator, and an instructional material for the use thereof.